of to-day, having alone in view the winning of honors in the annual field day contest; such development is as ill advised and disastrous as the over mental development referred to in a foregoing paragraph.

Every child entering school should receive a thorough physical examination, before a board of examining physicians; any departure from the normal should receive the careful attention of the examining board. Each child should have a systematic course of physical training according to its individual needs, extending from the time it enters school to the day of graduation. No child should be allowed to cultivate the mind and neglect the body; a child educated according to this plan, from the kindergarten age to the completion of the high school, will be fitted to follow any avenue of usefulness that may present itself.

I admit that it will take longer to complete the course of study as it exists in our public schools today, but I will guarantee this, that there will be fewer scholars drop out before the completion of the high school course than do now, and as a consequence the ratio of general knowledge would be higher, and the citizenship of the country placed upon a higher level.

TUBULAR DIARRHEA OR MEMBRANOUS COLIC.*

By WM. H. FLINT, M. D., Santa Barbara.

HAVING recently secured a characteristic specimen from a patient suffering with this affection, the writer takes pleasure in presenting it to you, and in inviting your attention to a brief consideration of this disease of the colon, which, in some cases, also involves the small intestine, and which has been designated by various authors as mucous, fibrinous or membranous colitis. Dr. Costa, in his article in the *American Journal of the Medical Sciences* for October, 1891, called it membranous enteritis, and Woodward, in his "History of the War of the Rebellion," gave an exhaustive account of the disease, preferring the designation tubular diarrhea, originated by John Mason Lord, because it does not imply any theory regarding the pathology.

It would seem judicious that this non-committal term, or some equivalent, be firmly established in nosology, since the name colitis is an evident misnomer. This is true because the disease, when uncomplicated, is not attended by the symptoms or signs of inflammation. Nothnagel suggested the name mucous or membranous colic, which seems to be a perfectly appropriate designation. Rothman, who is quoted by Adler, in "Wood's Handbook of the Medical Sciences" (edition of 1901, p. 199), had the opportunity of making autopsies, in a number of cases of the affection, in which complicating diseases had caused the death of the patients.

In these cases he found no lesions of the intestinal mucosa, nor have other observers noted, so far as I know, the presence of blood or of pus, either in the mucous discharges, or upon the surface of the intestinal mucosa, after the discharge of the mucous fibres, shreds or tubules characteristic of this disease. Osler states, in his article on this subject, in his "Practice of Medicine," that he has twice seen, in autopsies, mucous masses adherent to the mucosa of the colon, but capable of separation without lesion of the mucous membrane.

The etiology of this complaint is not thoroughly understood. A predisposing factor, of notable importance, seems, however, to be an exhausted and irritable nervous system. The victims of the disease, in the writer's experience, are almost always neurasthenic women, weakly children or men with notably neurotic antecedents, and generally of feeble physique.

There seems to be a reciprocal relation between the disease and neurasthenia, the one intensifying the other. Most of the authorities which the writer has been able to consult state that a very large majority of the patients affected by this disease are women, and these observers maintain that it should be classed among the neuroses, with which conclusion the writer is in perfect accord. In his opinion the excessive production of mucus might, perhaps, be determined by the occurrence of angio-neurotic edema of the intestinal mucosa. In angio-neurotic edema of the superficial tissues, we see a sudden, unaccountable swelling of the parts affected, occurring at irregular intervals and without known cause, while, in certain neurotic individuals, localized perspirations are not uncommon. May not, then, the exaggerated function of the intestinal mucous follicles be excited by some similar temporary and periodical vaso-motor irregularity, analogous to that of superficial angio-neurotic edema or to that which, in hysterical patients, causes the secretion of abnormally abundant and limpid urine?

Little is definitely known about the exciting causes of membranous colic, although patients often attribute the origin of their trouble to dietetic indiscretions. It would seem reasonable to suppose that rough, harsh and irritating foods, such as seeds of small fruits, or the hulls of vegetables, such as corn and beans, might provoke such an irritation of the intestinal mucous membrane as to precipitate an attack. The writer has chanced to see a number of cases developed during or soon after an attack of epidemic influenza. The writer's patients have almost without exception, suffered from constipation for some time before the initial attacks, which fact causes him to infer the caustive influence of hardened fecal masses in the colon.

Symptoms. The pathognomonic clinical feature of this disease is the intermittent passage of tenacious mucous flakes, shreds, casts, balls, clumps, rolls, ropes or tubes, varying in length from a fraction of an inch to a foot or more, preceded and accompanied by griping abdominal pains, which cease for a time after the expulsion of the mucous masses.

Nausea often exists during the attack, with some tenderness over the colon. The abdomen is usually not tympanitic. The discharges are often composed entirely of mucus. In other cases, fecal matter, generally in small quantity, is mingled with the mucus. The pain is ordinarily colic-like in character, but is sometimes described by patients as cutting, burning or lancinating. The pain originates in the course of the colon, most frequently in the caput coli, but it often radiates into the epigastrium, the umbilical region, or down the thighs. The painful discharges are not accompanied by an abnormal rise of temperature. The duration of the interval between the attacks varies from a few hours to a number of months, during which time the patient may, in uncomplicated cases, enjoy very good health or suffer only from neurasthenic symptoms. The disease may persist for years, and the individual attacks may last intermittently for several days or weeks. The patient's general condition is, usually, well maintained, unless emaciation and prostration follow an unreasonable reduction of the diet.

The attacks of pain are not invariably accompanied by the expulsion of the characteristic mucous masses. If the disorder is associated with inflammatory or organic intestinal diseases, such as colitis, enteritis or ulceration, the symptoms of these complicating maladies persist during the intervals between the painful paroxysms. The discharges are found, upon microscopical examination, to consist of mucus unmixed with fibrinous material, and holding a few epithelial cells or leukocytes entangled in the meshes of the mucous masses. No blood or pus occurs in simple cases, but both are found in those which complicate entero-colitis or intestinal ulceration.

I now take pleasure in presenting to the society a characteristic specimen, recently recovered from one of the writer's patients who had his initial attack of mucous colic during his convalescence from epidemic

*Read before the Santa Barbara County Society, April, 1905.

influenza. In this case, the pain originated in the region of the sigmoid flexure and radiated thence into the epigastrium.

In all the writer's uncomplicated cases the patients have recovered, but a number of them have been protracted, and both patients and physician have been obliged to call up their reserve forces of hope and of endurance.

The assurance may, in general, be confidently given to the patient that he will recover when he has fully regained his nervous energy. The case, of course, is very different when nervous colitis complicates organic diseases of an ulcerative or of a malignant nature.

Treatment. During the attacks of uncomplicated tubular diarrhea, the patient should preserve a recumbent posture, and should subsist upon a liquid diet, the chief ingredients of which may be milk diluted with Vichy water, broths made of beef, mutton, chicken, oysters or clams, with the white of an egg and expressed beef juice. The pain may be relieved by hot fomentations applied to the abdomen, or by phenacetin in 6-grain doses repeated p. r. n. Should these means fail, recourse may be cautiously had to opiates, but these must be used most guardedly.

The bowels should be opened daily by non-irritating laxatives, such as phosphate of soda or magnesia sulphate, and the patient's mental equilibrium is to be maintained by the repeated assurance that eventual recovery is certain. During the interval between the attacks the treatment should aim at the restoration and maintenance of the patient's physical strength and nervous energy by the employment of suitable dietetic, hygienic and medicinal means.

The diet should be selected with a view to furnishing abundant and easily digested aliments, which ought to be soft and unirritating, and which should tend to relieve constipation. The diet should not be unnecessarily restricted as to quantity.

Baths, massage of all parts of the body except the abdomen, and abundant exercise out of doors are to be recommended. Drugs are to be employed sparingly. Mild cathartics, such as the phosphate of sodium, calomel and cascara, or castor oil, are to be recommended if dietetic treatment fails to relieve the habitual constipation. Nervines are generally in order, and the writer gives the preference to nux vomica preparations.

Atropine sulphate, in doses of 1-200 grain, thrice daily has been advocated by some authorities, as well as enteric pills of silver nitrate, 1-6 grain each, given thrice daily one hour before meals. Beta-naphtol-bismuth, in 15-grain doses thrice daily, with hot water, one hour before meals, has given excellent results in some of the writer's cases. Injections and suppositories have seemed to do harm rather than good in the writer's experience.

PRACTICAL APPLICATION OF FUNCTIONAL DIAGNOSIS IN UNILATERAL KIDNEY-LESIONS.*

By Drs. M. KROTOSZYNER and W. P. WILLARD, San Francisco

SINCE our publication upon the newer methods of diagnosing unilateral kidney-lesions appeared we have had occasion to apply these methods on a comparatively large number of suspected renal affections. We are, therefore, able at present, on the basis of a rather extensive experience, to draw more accurate and reliable conclusions as to the practical value of these methods for the determination of kidney-function.

As to the technic of ureteral catheterization, we have stated that with patience, perseverance and the necessary technical skill almost every bladder could be cleared up to such an extent as to permit inspection and catheterization of the ureters. While this is true for most cases, we would have to modify that statement in this way, that, in cases of severe pyuria, where quick action is required, a successful cystoscopy and ureteral catheterization are sometimes impossible. In these cases one appreciates the value of the newer methods, as the older ones are often not liable to clear up the picture of dark renal lesions.

Except in one case that one of us recently reported to the San Francisco County Medical Society, we always were able to perform ureteral catheterization. In some cases, of course, as in case 7, it took many sittings and the patience of the physician, as well as that of the patient was taxed to its extreme. Wherever the ureter is imbedded in ulcerations or infiltrated tissue it takes many sittings before the field of the ureteral region can be searched to such a degree as to permit the finding and catheterization of a ureteral opening.

In these cases, where the sphincter of the bladder is distorted, where many ulcerations and diverticles are visible at the base of the bladder, only cystoscopy, and if possible ureteral catheterization will give reliable data as to the existence of an unilateral renal affection. This statement is made particularly with reference to any of the segregators in use for obtaining renal secretion separately. It is a very unreliable method in obscure kidney-lesions, since in these cases the bladder may be so distorted by chronic suppuration that the intravesical beak of the segregator may divide the vesical base in two chambers, one of which might contain both ureteral openings.

We have in some cases confined ourselves according to the teachings of the more conservative school of Nitze to catheterize one ureter, namely, that of the supposedly diseased side. The fact, though, must not be overlooked that results obtained by these means are not without a grave source of error. For it is sure, as many contend, and we also have seen, that urine will dribble along the side of the ureter-catheter into the bladder, thus mixing the secretion of the other kidney, obtained through the bladder catheter, with pathological elements belonging to the diseased side. Besides, one must not forget that the urine obtained from the bladder, which represents the secretion of one kidney, to be subjected to several minute and delicate tests, is mixed with the secretion of the bladder-wall, which, as a rule, is inflamed and diseased.

The rule, therefore, ought to be to catheterize both ureters in all cases where no contra-indication exists. The only pathological condition which possibly represents a contra-indication is tuberculosis. We, and many others, for that matter, have never seen a mishap after double ureteral catheterization, provided, of course, technic and asepsis are faultless. On the other hand, bilateral catheterization and subjecting both specimens to the regular tests gives such uniformly reliable results, that only one familiar with the method and its superiority over the older ones can appreciate its value.

Both samples of urine were generally examined cryoscopically. Cryoscopy of urine was found, as previously stated, a valuable method for comparison. For obvious reasons it is impossible to draw any conclusions from cryoscopical findings of mixed urine, this test being just as valueless as a urea-test, without knowing the exact amount of ingesta. The real, and to our mind only practical value of cryoscopy lies in its comparative results. Values of —1 to 2 on one, and —0.2 to 0.5 on the other side, show at a glance where the renal filter may be at fault, or where kidney-function is defective.

Blood cryoscopy has not proved of considerable value in our hands, and we read with satisfaction reports from other workers in the field coinciding with our experience. We are at present engaged in experimental work upon this method of examination that, according to Kummell, is one of the most valuable tests for kidney capacity. If this author finds a blood-point above —0.59, he will refuse an operation on one kidney for fear that the other will not sufficiently

*Read at the Thirty-fifth Annual Meeting of the State Society, Riverside, April, 1905.